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Masanori Taketsugu

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EXAMINER

IQBAL, KHAWAR

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/735,193	Applicant(s) TAKETSUGU, MASANORI	
	Examiner KHAWAR IQBAL	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-26, 28-35 and 37-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-26, 28-35 and 37-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 41-42 rejected under 35 U.S.C. 102(a) as being anticipated by

OpenRAN: a new architecture for mobile wireless Internet radio access networks
by Kempf, J.; Yegani, P.

Regarding claim 41 Kempf et al teaches a terminal resource controller (control plane, fig. 2) comprising (figs. 1-2):

a terminal position detector, a common radio resource manager, a broadcast network device; and a mobile controller, wherein the terminal resource controller (control plane, fig. 2, included Cell control, Mobile control, UE GEO- location Common Radio resource management, Paging/broadcast and Interworking) performs a control signaling processing independent of a radio transmission scheme (page 120-121), wherein the terminal resource controller lacks a radio layer controller (Radio Layer 1), and wherein the terminal resource controller (control plane, fig. 2) manages a plurality of base station resource controllers that perform a control dependent on the radio transmission scheme (page 120-121).

Regarding claim 42 Kempf et al teaches a terminal resource controller comprising (fig. 1-2): terminal position detection means for detecting a terminal position;

common radio resource management means for managing a common radio resource; broadcast means for broadcasting; and mobile control means for controlling a mobile terminal, wherein the terminal resource controller performs a control independent of a radio transmission scheme, and wherein the terminal resource controller manages a plurality of base station resource controllers that perform a control dependent on the radio transmission scheme (page 120-121).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23-26, 28-35, 37-40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over **OpenRAN: a new architecture for mobile wireless Internet radio access networks** by Kempf, J.; Yegani, P.

Regarding claim 23 Kempf et al teaches a mobile communications system comprising (figs. 1-2):

a terminal resource controller (control plane, fig. 2) operable to control a call signaling processing independent of a radio transmission scheme (page 120, line 3-35, fig. 2), the terminal resource controller (control plane, fig. 2) comprising a terminal position detector (UE Geu-location, fig. 2) operable to detect a position of at least one mobile terminal (col. 121), a common radio resource manager (Common Radio Resource Management, fig. 2) operable to manage a common radio resource (page

121), a broadcast device (paging/Broadcasting, fig. 2) operable to control a flow of radio broadcast (page 121), and a mobile controller (Mobile Control, fig. 2) operable to control the at least one mobile terminal (page 120); and

a plurality of base station resource controllers (Bearer Plane function Entities, fig. 2) operable to control a user data transfer dependent on the radio transmission scheme (page 121);

wherein said terminal resource controller (control plane, fig. 2) manages said plurality of base station resource controllers (Bearer Plane function Entities, fig. 2) (page 120 lines 20-35, page 121, lines 15-30).

Kempf et al discloses radio layer controller (Radio Layer) (page 121, fig. 2).

Kempf et al does not disclose expressly each base station resource controller including a radio layer controller located entirely within the each base station resource controller.

Kempf et al suggests that bearer plane functional entity and radio layer 1 functional entity (page 121). Further, according to **In re Larson** 144 U.S.P.Q. 347, when parts are rigidly secured together as a single unit, they function as a unitary whole. Further it would be obvious to integrate the radio layer 1 functional entity into the bearer plane functional entity so that the system can perform separate functions using a single plane entity.

Regarding claim 24 Kempf et al teaches wherein said terminal resource controller is connected to said plurality of base station resource controllers through said switching equipment (abstract, page 120 lines 20-35, page 121, lines 15-30).

Regarding claim 25 Kempf et al teaches wherein said switching equipment is a router or a hub (abstract, fig. 1).

Regarding claim 26 Kempf et al teaches wherein said terminal resource controller is physically separated from said plurality of base station resource controllers (abstract, page 120 lines 20-35).

Regarding claim 28 Kempf et al teaches wherein each of said plurality of base station resource controllers comprises, a cell controller, a cell communication gateway, and a user radio gateway (col. 5, lines 5-35, see figs. 1 and 2).

Regarding claim 29 Kempf et al teaches wherein each of a plurality of base station resource controllers is incorporated into a base station (abstract, page 121, lines 1-50).

Regarding claim 30 Kempf et al teaches further comprising a mobile terminal (abstract, page 120 lines 20-35, page 121, lines 15-30).

Regarding claim 31 Kempf et al teaches a method of controlling a mobile communications system, comprising (fig. 1-2):

using a terminal resource controller in the mobile communications system to control signaling processing independent of a radio transmission scheme, the step of using the terminal resource controller including detecting a position of at least one mobile terminal using a terminal position detector of the terminal resource controller, managing a common radio resource using a common radio resource manager of the terminal resource controller, controlling a flow of a radio broadcast using a broadcast

device of the terminal resource controller and controlling the at least one mobile terminal using a mobile controller of the terminal resource controller (page 120); and using a plurality of base station resource controllers in the mobile communications system to control user data transfer dependent on the radio transmission scheme (page 121),

wherein said terminal resource controller manages said plurality of base station resource controllers (page 120-page 121).

Kempf et al discloses radio layer controller (Radio Layer) (page 121, fig. 2).

Kempf et al does not disclose expressly each base station resource controller including a radio layer controller located entirely within the each base station resource controller.

Kempf et al suggests that bearer plane functional entity and radio layer 1 functional entity (page 121). Further, according to **In re Larson** 144 U.S.P.Q. 347, when parts are rigidly secured together as a single unit, they function as a unitary whole. Further it would be obvious to integrate the radio layer 1 functional entity into the bearer plane functional entity so that the system can perform separate functions using a single plane entity.

Regarding claim 32 Kempf et al teaches a mobile communications system comprising (figs. 1-2):

a plurality of terminal resource controllers that perform a control signaling processing independent of a radio transmission scheme, each terminal resource controller comprising a terminal position detector operable to detect a position of at least one

mobile terminal, a common radio resource manager operable to manage a common radio resource, a broadcast device operable to control a flow of radio broadcast, and a mobile controller operable to control the at least one mobile terminal (page 120); and a base station resource controller that performs a control dependent on the radio transmission scheme, wherein said plurality of terminal resource controllers manage said base station resource controller (page 120- page 121). Kempf et al discloses radio layer controller (Radio Layer) (page 121, fig. 2).

Kempf et al does not disclose expressly each base station resource controller including a radio layer controller located entirely within the each base station resource controller.

Kempf et al suggests that bearer plane functional entity and radio layer 1 functional entity (page 121). Further, according to **In re Larson** 144 U.S.P.Q. 347, when parts are rigidly secured together as a single unit, they function as a unitary whole. Further it would be obvious to integrate the radio layer 1 functional entity into the bearer plane functional entity so that the system can perform separate functions using a single plane entity.

Regarding claim 33 Kempf et al teaches a switching element, wherein said plurality of terminal resource controllers are connected to said base station resource controller through said switching equipment (abstract, page 120 lines 20-35, page 121, lines 15-30).

Regarding claim 34 Kempf et al teaches wherein said switching equipment is a router or a hub (abstract, page 120 lines 20-35, page 121, lines 15-30, fig. 1).

Regarding claim 35 Oom et al teaches wherein said plurality of terminal resource controllers are physically separated from said base station resource controller (abstract, page 120 lines 20-35, page 121, lines 15-30).

Regarding claim 37 Kempf et al teaches wherein said plurality of base station controllers comprises: a cell controller, a cell communication gateway, and a user radio gateway (page 121, lines 15-50).

Regarding claim 38 Kempf et al teaches wherein each of a plurality of base station resource controllers is incorporated into a base station (abstract, page 120 lines 20-35, page 121, lines 15-30).

Regarding claim 39 Kempf et al teaches further comprising a mobile terminal (fig. 1, mobile device).

Regarding claim 40 Kempf et al teaches a method of controlling a mobile communications system, comprising (figs. 1-2):

a plurality of terminal resource controllers in the mobile communications system performing a control independent of a radio transmission scheme, using each of the plurality of terminal resource controllers including detecting a position of at least one mobile terminal using a terminal position detector of the terminal resource controller, managing a common radio resource using a common radio resource manager of the terminal resource controller, controlling a flow of a radio broadcast using a broadcast device of the terminal resource controller, and controlling the at least one mobile terminal using a mobile controller of the terminal resource controller (page 120-121); and a base station resource controller in the mobile communications system performing

a control dependent on the radio transmission scheme (page 121); wherein said plurality of terminal resource controllers manage said base station resource controller (page 120-121). Kempf et al discloses radio layer controller (Radio Layer) (page 121, fig. 2).

Kempf et al does not disclose expressly each base station resource controller including a radio layer controller located entirely within the each base station resource controller.

Kempf et al suggests that bearer plane functional entity and radio layer 1 functional entity (page 121). Further, according to **In re Larson** 144 U.S.P.Q. 347, when parts are rigidly secured together as a single unit, they function as a unitary whole. Further it would be obvious to integrate the radio layer 1 functional entity into the bearer plane functional entity so that the system can perform separate functions using a single plane entity.

Regarding claim 43 Kempf et al teaches a method of controlling a terminal resource controller, comprising step of:

controlling signaling processing independent of a radio transmission scheme (page 120); detecting a position of at least one mobile terminal using a terminal position detector of the terminal resource controller; managing a common radio resource using a common radio resource manager of the terminal resource controller; controlling a flow of a radio broadcast using a broadcast device of the terminal resource controller; controlling the at least one mobile terminal using a mobile controller of the terminal resource controller (page 120, see claim 1 above); and

wherein said terminal resource controller manages a plurality of base station resource controllers that perform a control dependent on a radio transmission scheme (page 120-121). Kempf et al discloses radio layer controller (Radio Layer) (page 121, fig. 2).

Kempf et al does not disclose expressly each base station resource controller including a radio layer controller located entirely within the each base station resource controller.

Kempf et al suggests that bearer plane functional entity and radio layer 1 functional entity (page 121). Further, according to **In re Larson** 144 U.S.P.Q. 347, when parts are rigidly secured together as a single unit, they function as a unitary whole. Further it would be obvious to integrate the radio layer 1 functional entity into the bearer plane functional entity so that the system can perform separate functions using a single plane entity.

Response to Arguments

1. Applicant's arguments with respect to claims 23-26, 28-35, 37-43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAWAR IQBAL whose telephone number is (571)272-7909. The examiner can normally be reached on 9 am to 6.30 pm Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GEORGE ENG can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617

/K. I./
Examiner, Art Unit 2617